

Ex. 1. Read the article

## Deep-sea exploration

### The age of Aquarius

#### Inner space is almost as hard to explore as outer space

JAMES CAMERON knows how to make a splash. Literally. On March 25th the director of “The Terminator”, “Titanic” and “Avatar” **plunged into** the Challenger Deep of the Mariana Trench, 500km (300 miles) from Guam. When he reached the bottom, he sent a self-congratulatory tweet, and then tootled about for a couple of hours before taking *Deepsea Challenger*, his lime-green one-man submarine, back up the 11km to the surface.

This **venture** certainly scores high in the **jaw-dropping** department. The only other people **to plumb** the Challenger Deep—as its name suggests, the most **profound** point in the ocean—were Jacques Piccard and Don Walsh, who did so in 1960, in a vessel called *Trieste*. The latest dive, however, was not very successful on the scientific front. It **brought back** no specimens.

This was in sharp contrast to a less publicised mission, to the **paltry** depth of 2.5km, where the pressure is a mere 250 times that of the atmosphere (the Challenger Deep’s pressure is four times that). This was organised by Ifremer, France’s oceanographic institute. Its three-man **craft**, *Nautilus* (named after the submarine in Jules Verne’s novel, “20,000 Leagues under the Sea”), not only brought back samples, but brought them back alive.

That is no **mean** feat. Because creatures of the deep ocean have evolved to tolerate so much pressure, their cell membranes tend **to liquefy** when that pressure is released. To stop this happening *Nautilus*’s samples were transported in a special chamber called PERISCOP. This chamber, designed by Bruce Shillito and Gerard Hamel, of Pierre and Marie Curie University, in Paris, is a tank with a capacity of 2.7 litres which is capable of containing a pressure of more than 200 atmospheres.

In 2008 PERISCOP was used **to reel in** a live fish from a then-record depth of 2.3km. The fish had been living near an underwater hot spring, known as a hydrothermal vent, in the Mid-Atlantic Ridge. This time, *Nautilus*’s mother ship, *L’Atalante*, had spent three weeks **trawling around** a similar vent in the East Pacific Ridge as part of the MESCAL project, a collaboration between a dozen American and European oceanographic research institutions. On March 26th she sailed into Manzanillo, in Mexico, bearing a **trove** of specimens including a dozen or so Pompeii worms. These polychaetes (relatives of the common ragworm) are the most heat-tolerant animals known. They are able to live at 60°C. Biologists would like to understand how they do it.

To help them **find out** *L’Atalante* has been **fitted with** a second chamber, BALIST, into which PERISCOP’s catch can be transferred. Researchers **on board ship** were thus able to study the worms alive for several weeks. For the unfortunate worms, however, Manzanillo was the end of the line. They were killed, frozen and transported back to France.

Future trophies may be luckier. Ifremer’s researchers are **searching for** a way to keep deep-sea animals alive indefinitely, so that their entire life cycles can be studied. This means building high-pressure, **onshore** fish tanks. On April 7th the Océanopolis, a big aquarium in Brest, will **unveil** two such chambers. Each Abyss Box, as the **contraptions** are known, costs €100,000 (\$134,000) and contains 16 litres of seawater held at 180 atmospheres. Crucially, each has a window: a glass visor 15cm across and 8cm thick.

At the moment, one of the boxes is inhabited by 43 deep-sea shrimps. The other houses three crabs. Both come from Atlantic vents located around 1.8km below the surface. It will be the first time members of the public who are not James Cameron have had a chance to behold such creatures alive.

Ex. 2. Match the phrasal verbs from the article with their definitions and use in the sentences.

1) to plunge into	a) to wind the reel on a fishing rod so that a fish caught on the line comes towards you;
2) to bring back	b) to jump or dive into water;
3) to reel in	c) to take something or someone with you when you come back from

	somewhere;
4) to trawl around	d) to get information, after trying to discover it or by chance
5) to find out	e) to fish by pulling a special wide net behind a boat

1) He asked me \_\_\_\_\_ what your plans are after you leave. 2) Shrimp boats can \_\_\_\_\_ continuously for hours at a time. 3) He stripped off and \_\_\_\_\_ the sea. 4) If you're going to the store, could you \_\_\_\_\_ me \_\_\_\_\_ a six-pack? 5) You could let them off the hook, or you could \_\_\_\_\_ them \_\_\_\_\_.

Ex. 3. Fill in the gaps using the given words.

**contraption specimen trove liquefy dropped crucial profound venture paltry craft unveiled plumb**

- 1) The group is planning to risk everything to get their next \_\_\_\_\_ off the ground.
- 2) 'You're not serious, are you?' Ellen's jaw \_\_\_\_\_.
- 3) Psychologists try to \_\_\_\_\_ the deepest mysteries of the human psyche.
- 4) The mother's behaviour has a \_\_\_\_\_ impact on the developing child.
- 5) But the pay is \_\_\_\_\_ compared with the hundreds that can be made on a good day of lobstering.
- 6) Therefore it is an easy but hardy \_\_\_\_\_ to grow in the aquarium.
- 7) There were no survivors from either \_\_\_\_\_.
- 8) Some gases \_\_\_\_\_ at cold temperatures.
- 9) GM's solar-powered car was \_\_\_\_\_ at last month's Geneva auto show.
- 10) The atmosphere itself, as analyzed by the Viking landers, is a treasure \_\_\_\_\_ of seemingly paradoxical features.
- 11) By demonstrating his floating \_\_\_\_\_ - part surfboard, part kayak and part sailboard - Halfon hopes to create a tide of attention.
- 12) This was a \_\_\_\_\_ stage in the main plot.